

Course Name: College Prep Math

Semester or Year-Long
Grade Level: 11, 12

Endorsement Requirement: Level 3, 4
Prerequisite: Algebra II

Course Description:

Students will acquire the skills needed to be successful in Math 1050 (College Algebra). The focus of the course will be on analysis and use of functions. Emphasis will be given to collecting data to motivate the development of the analytical model of each function that will be studied.

Course Outline:

Exponents

Polynomial Expressions

- Simplifying expressions
- Solving equations
- Factoring
- Dividing
- Completing the square

Function Analysis Using Intercepts, Zeros, Domain and Range, End Behavior, Extrema, and Transformations

- Absolute value
- Quadratics
- Exponential and logarithmic
- Rational
- Radical
- Trigonometric (for full-year course)

Equations and Systems of Equations

- Variation
- Rational equations
- Linear and non-linear
- Real-world models

Logarithms

- Simplifying
- Solving equations

Conic Sections (for full-year course)

- Locus descriptions
- Completing the square to find standard form
- Real-world context

Descriptive Statistics (for full-year course)

- Shape, center, spread
- Graphical representations
- Experiments, surveys, and observational studies
- Bivariate data and trend-line models

Teacher Resources:

Brown, Richard. *Advanced Mathematics*.